

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Part 90 of the)	WT Docket No. 01-146
Commission's Rules and Policies for)	RM-9966
Applications and Licensing of Low Power)	
Operations in the Private Land Mobile)	
Radio 450-470 MHz Band)	

Comments of Enalasys Corporation

Enalasys Corporation ("Enalasys"), a leading manufacturer of Heating, Ventilation and Air Conditioning ("HVAV") diagnostic equipment, by its counsel, hereby submits these comments to the Notice of Proposed Rulemaking in the above-captioned proceeding which proposes new regulations to recognize the diversity of low power operations in the 450-470 MHz band. With some changes, as discussed below, Enalasys supports the Commission's proposals and applauds the Commission's willingness to take a flexible approach to low power use of the 450-470 MHz band.

Enalasys manufactures unique diagnostic devices that measure the performance of virtually every aspect of HVAC systems to the purposes of energy conservation and efficiency. The Enalasys EscanAC system consists of five wireless data collection units ("DCUs"), a laptop computer, proprietary software and a printer. Three of the DCUs are integrated into special airflow hoods—one for supply registers, one for return registers and one for condensing unit exhaust. A fourth DCU collects a variety of data at the condensing unit, including refrigerant temperatures and pressures. The fifth DCU, a remote sensor, measures ambient conditions in an attic or crawl space when the air handler or most of the ductwork is located in unconditioned space. Together, these RF components are designed to measure the energy efficiency of an HVAC system. The EscanAC measures and computes more than 30 environmental factors that determine: whether the output of HVAC facilities comply with manufacturer specifications; the amount of heat loss in a system; the efficacy of repairs; and whether a malfunction in the system may cause health or safety issues.¹ Information from the sensors are transmitted to a transceiver located at the laptop computer which produces a printout of data and graphic representations of an HVAC's total system performance. Each sensor is queried by a 50 millisecond transmission from the laptop transmitter, and sends its data to the

¹ These calculations include: Air flow at the condenser, outside ambient temperature and humidity, barometric pressure, intake air vapor pressure, exhaust specific humidity, air volume total room effect BTUH removed, air flow at each supply outlet and at each return inlet, condenser condensing temperature etc.

laptop in a 250 millisecond transmission. The EscanAC system is never in continuous operation and is used generally less than once yearly only for diagnostic purposes and then removed from the HVAC system and taken elsewhere.

It is obvious that as we enter another period of energy uncertainty, spiraling energy costs and increased consumption of energy, we must take advantage of new technology to make our energy use as efficient as possible. All our scarce resources (including spectrum, of course) must be used efficiently. Thus it is in the public interest to promote the use of any method that will conserve energy and make its use as efficient as possible. Enalasys has developed a system that will enable the collection of measurements that once took hours, to be made economically in minutes.

Unfortunately, under present FCC regulations there are few frequencies available in the 450-470 MHz band for itinerant, nationwide, data transmissions. Obviously, fixed operation is not an option for Enalasys' portable equipment. Unlicensed operation under Part 15 is not an option for Enalasys because the power limitations would not enable diagnostic measurements over a sufficient distance.

The Proposed Amendments to Part 90 Should be Modified

The proposals in this Docket are clearly a commendable effort to bring much needed flexibility to operations in the 450-470 MHz band. In particular, the Group C proposal in many respects represents just the regulatory approach that Enalasys needs. Because HVAC contractors would use Enalasys equipment in different locations, the itinerant, nationwide proposal would be essential for the EscanAC service to be provided economically to consumers and small businesses. The two watt power proposal would enable the use of Enalasys equipment not only in homes, but in larger buildings such as factories and warehouses over a large geographic area. As it stands, however, the Group C proposal contains no provision for uncoordinated, nationwide itinerant frequencies for transmission of data. Enalasys urges the Commission to modify the Group C proposal so that at least a small number of the frequencies proposed may be used for data transmission on a primary basis. While the Group B proposal would permit transmission of data from fixed locations, it must be recognized that there is a growing need for itinerant data transmission as well. The Enalasys equipment will be used nationwide and moved from location to location as service calls require. Although under the present rules, Enalasys equipment might function on a secondary basis (although present spectrum is becoming more and more crowded), it obviously could not function at all absent the ability to move the equipment from place to place. Thus, permitting primary data transmissions on an itinerant basis on several Group B frequencies is necessary for Enalasys' EscanAC and other new technologies to evolve.

Enalasys understands that the Commission may be concerned about data uses that might render the proposed itinerant bands unusable by others. The answer, Enalasys submits, is to prohibit continuous data transmissions. As noted above, the Enalasys system does not require continuous transmissions and the Commission is encouraged to

adopt some reasonable duty cycle to prohibit continuous transmissions on frequencies used for data transmission.

Permitting Data Transmission is in the Public Interest

Five months ago, even before the present concern for the continuing flow of oil from the Middle East, Vice President Cheney delivered to the President the proposals of the National Energy Policy Development Group.² Chapter four of that document, “Using Energy Wisely, Increasing Energy Conservation and Efficiency,” made it very clear that the federal government has a unique role in promoting energy efficiency by searching “for more innovative technologies that improve efficiency and conservation through research and development.”³ Specifically, the Report explained, “For example, advanced sensors and controls enable more efficient operation of buildings and factories...”⁴ The Report also explained how increased energy efficiency will directly impact the consumer, noting that because of increasing costs, “Heating and cooling expenses represent about 40% of household energy costs.”⁵

In light of present circumstances, it is no exaggeration to urge that all government agencies, including the Commission should make every effort to remove impediments to the production of equipment that will improve energy efficiency and help reduce dependency on imports of foreign energy sources. Here, Enalasys is only requesting that the Commission amend its proposals for the Group C frequencies and permit a portion of those frequencies to be used for the transmission of data on a primary basis. This simple action by the Commission will not only enable Enalasys to produce its promising products, but likely foster the development of other unique products as well.

Conclusion.

Over the last few years, it has become apparent that wireless data services are growing exponentially. Even in the four years since the LMCC Consensus plan, there have been many new applications that would benefit from an allocation of low power channels for data transmission. The Commission has the opportunity to recognize this growing need by fashioning its final Group C standards flexibly to permit a portion of these bands for wireless data use. Whatever the importance of more spectrum for

² See, National Energy Policy, Report of the National Energy Policy Development Group, May 16, 2001

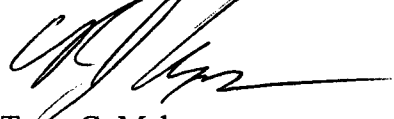
³ Id at 4-1

⁴ Id

⁵ Id at 2-1

itinerant voice communications (an activity for which there are surely options), there is an even greater need for itinerant data frequencies for which no other reasonable alternatives are available. Enalasys urges the Commission to fulfill both needs.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Terry G. Mahn', written over the words 'Respectfully submitted,'.

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